

IN THE CLAIMS

1-51. (cancelled)

52. (new) A wiring circuit panel, comprising:

a first metal layer including a wiring circuit pattern;

a plurality of discrete solid metal bumps overlying a surface of said first metal layer;

an insulating film overlying said surface of said first metal layer, wherein tops of said plurality of metal bumps extend upward through openings in said insulating film; and

a plurality of solder balls overlying said tops of said plurality of metal bumps, said solder balls being in conductive communication with said metal bumps.

53. (new) The wiring circuit panel as claimed in claim 52, wherein said first metal layer and said plurality of bumps consist essentially of copper.

54. (new) The wiring circuit panel as claimed in claim 52, wherein at least a portion of said insulating film is flexible.

55. (new) The wiring circuit panel as claimed in claim 52, wherein said tops of each of said plurality of metal bumps include an upwardly facing concave surface and said plurality of solder balls contact said concave surfaces of said plurality of metal bumps.

56. (new) A circuit module, comprising:

a flexible circuit panel including

a first metal layer including a wiring circuit pattern;

a plurality of discrete solid metal bumps overlying a surface of said wiring circuit pattern;

a substantially flexible insulating film overlying said surface of said wiring circuit pattern, wherein tops of

said plurality of metal bumps extend upward through openings in said insulating film; and

a plurality of solder balls overlying said tops of said plurality of metal bumps, said solder balls being in conductive communication with said plurality of metal bumps; and

a second circuit panel having a substantially rigid dielectric element and a second wiring circuit pattern overlying at least a portion of said dielectric element,

wherein said second circuit panel is joined to said flexible circuit panel such that said second wiring circuit pattern conductively communicates with said flexible wiring circuit pattern through said plurality of metal bumps.

57. (new) The wiring circuit panel as claimed in claim 52, further comprising a second metal layer overlying said surface of said first metal layer, said plurality of metal bumps overlying said second metal layer, wherein said second metal layer is an etch stop layer which substantially resists an etchant which would attack a first metal included in said first metal layer.

58. (new) The wiring circuit panel as claimed in claim 57, wherein said plurality of metal bumps are formed by etching a third metal layer overlying said second metal layer.

59. (new) The wiring circuit panel as claimed in claim 58, wherein said plurality of metal bumps and said first metal layer each consist essentially of a first metal.